

Field of Measurement	Parameter and Range of Measurement	Calibration Measurement Uncertainty ($\pm$)	Standard/Test Method Technique/Equipment
4. DIMENSION	Gauge block (steel) 0.5 mm to 10 mm > 10 mm to 25 mm > 25 mm to 50 mm > 50 mm to 75 mm > 50 mm to 75 mm 125 mm 150 mm 175 mm 200 mm 250 mm 300 mm 400 mm 500 mm	0.060 μm 0.080 μm 0.11 μm 0.15 μm 0.19 μm 0.26 μm 0.27 μm 0.28 μm 0.30 μm 0.33 μm 0.37 μm 0.45 μm 0.53 μm	ISO 3650 by comparison technique
	Plain plug gauge 0.5 mm to 100 mm	0.70 μm	EURAMET cg-6 by direct measurement of length standards
	Plain ring gauge, setting ring gauge (parallel) diameter 3 mm to 10 mm > 10 mm to 100 mm > 100 mm to 300 mm	0.80 μm 1.0 μm 1.5 μm	EURAMET cg-6 by direct comparison to ring gauge standards
	Master bars/setting bars (flatted ends and spherical ends) 1 mm to 100 mm > 100 mm to 500 mm > 500 mm to 1 500 mm	0.70 μm 1.1 μm 3.0 μm	In-house method: CP-D1011 by direct measurement (< 100 mm) and comparison technique (> 100 mm)
	Pin gauge 0.5 mm to 100 mm	0.70 μm	EURAMET cg-6 by direct measurement
	Taper gauge 0.5 mm to 60 mm	30 μm	In-house method: CP-D1050 based on ISO 1947 by direct measurement
	Linear thickness standard 0.5 mm to 1 mm > 1 mm to 50 mm > 50 mm to 100 mm	0.30 μm 0.50 μm	In-house method: CP-D1041 by direct measurement and comparison technique
	Snap gauge 3 mm to 100 mm > 100 mm to 300 mm	1.2 μm 1.5 μm	JIS B 7420 by comparison to ring gauge standards
	Straight edge 100 mm to 900 mm	3.0 μm	In-house method: CP-D1047 Based on JIS B 7514 by comparison to straight edge standards
	Sine bar 100 mm to 200 mm > 200 mm to 500 mm	1.0 μm 1.2 μm	JIS B 7523 by direct measurement of length standards

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4. Dimension (Cont.)	Caliper checker 0 mm to 300 mm > 300 mm to 600 mm	1.0 μ m 1.5 μ m	In-house method: CP-D1002 by comparison to gauge block standards
	Height setting micrometer and height master 0 mm to 300 mm > 300 mm to 600 mm	1.0 μ m 1.5 μ m	ISO 7863 by comparison to gauge block standards
	Riser block size 300 mm	1.0 μ m	ISO 7863 by comparison to gauge block standards
	Depth micrometer checker 25 mm to 100 mm > 100 mm to 300 mm	0.50 μ m 1.0 μ m	ISO 7863 by comparison to gauge block standards
	Dial calibration tester 0 mm to 1 mm 0 mm to 5 mm 0 mm to 25 mm	0.20 μ m 0.20 μ m 0.40 μ m	JIS B 7503 by direct measurement of laser interferometer
	Micrometer caliper for external measurement 0 mm to 25 mm > 25 mm to 500 mm	1.5 μ m 2.5 μ m	ISO 3611
	Micrometer caliper for Internal measurement 25 mm to 50 mm > 50 mm to 100 mm > 100 mm to 400 mm > 400 mm to 500 mm	0.90 μ m 1.0 μ m 2.0 μ m 3.0 μ m	JIS B 7502 and DIN 863-4
	Depth micrometer 0 mm to 300 mm	1.5 μ m	JIS B 7544
	Three point internal micrometer 3 mm to 300 mm	1.5 μ m	DIN 863-4
	Micrometer head 0 mm to 50 mm	0.90 μ m	JIS B 7502
	Indicator comparator 0 mm to 0.5 mm	0.20 μ m	JIS B 7519
	Vernier dial and digital caliper 0 mm to 300 mm > 300 mm to 1 000 mm	13 μ m 15 μ m	ISO 3599 and ISO 6906
	Height gauge 0 mm to 1 000 mm	15 μ m	JIS B 7517
	Depth gauge 0 mm to 600 mm	15 μ m	JIS B 7518

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4. Dimension (Cont.)	Dial Gauge 0 mm to 25 mm 0 mm to 100 mm 0 mm to 500 mm	0.6 μm 1.5 μm 5.0 μm	ISO 463
	Dial Test Indicator <i>0 mm to 0.8 mm</i>	3.5 μm	JIS B7533
	Protractor 0° to 180°	0.10°	In-house method CP-D1043 by comparison to angle standards (Sine Bar)
	Cylinder Gauge, Bore Gauge 6 mm to 300 mm	1.3 μm	JIS B 7515 by comparison to length standards
	Linear Measuring Device Linear Scale 0 mm to 100 mm >100 mm to 500 mm >500 mm to 1000 mm >1.0 m to 2.0 m	1.0 μm 2.0 μm 3.0 μm 5.0 μm	JIS B 7450 by direct measurement of laser interferometer